

# INMARSAT-KA Telecommand Link Budget

Parameter	Unit	Ka band	C band					
		On-Station	OSBU (Emergency)			Transfer Orbit		
			Bicone	Fwd Pipe	Aft Pipe	Bicone	Fwd Pipe	Aft Pipe
Frequency	GHz	29.468, 29.494	5.9265	6.4225	6.4225	5.9265	6.4225	6.4225
Polarization		C	H	RHCP	RHCP	H	RHCP	RHCP
Ground Station EIRP	dBW	68	76	76	76	88	88	88
PFD at S/C Input	dBW/m <sup>2</sup>	-97.2	-90.6	-87.6	-87.6	-83.5	-80.5	-80.5
Required Link Margin over Clear Sky	dB	6	3	3	3	3	3	3
PFD at S/C Input with Link Margin	dBW/m <sup>2</sup>	-103.2	-93.6	-90.6	-90.6	-86.5	-83.5	-83.5
Received Power at CR Input	dBm	-105.4	-107.6	-103.6	-101.6	-100.5	-96.5	-94.5
Required Power at CR Input	dBm	-106.6	-107.6	-107.6	-107.6	-107.6	-107.6	-107.6
Link Margin	dB	1.2	0	4	6	7.1	11.1	13.1

Note:

OSBU = On-station Backup

CR = Command receiver

Supersynchronous orbit for Transfer Orbit (assumed 5 degree elevation angle & Supersync altitude of 65000km)